# What is Needed to Forecast Sporadic E?

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The possibility of predicting sporadic *E* is explored in this paper. To realistically achieve this objective the following questions must be answered: What combination of environmental factors leads to the bulk formation of sporadic *E* layers? What is the threshold of external wave modulation that results in layer structuring? What is the minimum set of environmental observations that is needed to provide actionable sporadic *E* forecast capabilities? This paper presents recent progress toward answering these questions through the inclusion of metal ion chemistry ($Mg^+$ and $Fe^+$) and associated transport terms into the NRL SAMI3 ionosphere model in conjunction improved specification of neutral atmospheric drivers from recent whole atmosphere general circulation models.

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